

## PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

**Johnson**

**Serial No.:**

10/028,303

**Filed:**

December 28, 2001

Confirmation No.

2895

For:

# CURRENT CONFINEMENT, CAPAITANCE REDUCTION AND ISOLATION OF VCSELS USING DEEP ELEMENTAL TAPS

**Examiner:**

James W. Davie



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) Art Unit  
) 2828  
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**CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. § 1.10**

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I hereby certify that the following documents are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10 in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 6 day of April, 2004:

- Transmittal Letter (2 pgs.)
- Revocation and Substitute Power of Attorney with Exhibits A & B (10 pgs.)
- Change of Attorney Docket Number (2 pgs.)
- Postcard

Respectfully submitted,

  
Kimberly Kendrick, Paralegal to R. Burns Israelsen  
Customer No. 022913

RBI:kk  
KKK0000002609V001



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PATENT  
15436.436.8

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For: CURRENT CONFINEMENT, CAPACITANCE  
REDUCTION AND ISOLATION OF VCSELS  
USING DEEP ELEMENTAL TAPS

# CURRENT CONFINEMENT, CAPACITANCE REDUCTION AND ISOLATION OF VCSELS USING DEEP ELEMENTAL TAPS

Examiner: James W. Davie

James W. Davie

TRANSMITTAL FOR REVOCATION AND SUBSTITUTE POWER OF ATTORNEY, AND CHANGE OF ATTORNEY DOCKET NUMBER

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is a Revocation and Substitute Power of Attorney, and a Change of Attorney Docket Number for entry in the above-identified application.

Dated this 6 day of April, 2004.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "R. Burns Israelson".

R. BURNS ISRAELSEN  
Attorney for Applicant  
Registration No. 42,685  
Customer No. 022913

RBI:kk  
KKK0000002608V001

PATENT  
Docket No.: 15436.436.8

In re application of

Serial No.: 10/028,303

Filed: December 28, 2001

Confirmation No. 2895

For: CURRENT CONFINEMENT, CAPACITANCE  
REDUCTION AND ISOLATION OF VCSELS  
USING DEEP ELEMENTAL TAPS

Examiner: James W. Davie

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

I, the undersigned, Frank H. Levinson, state that I am Chairman of the Board of Finisar Corporation and that I am authorized to execute this Revocation and Substitute Power of Attorney on behalf of Finisar Corporation.

I further state that Finisar Corporation is the assignee of the entire interest of the above-identified patent or patent application as shown by the assignment(s) recorded in the U.S. patent and Trademark Office at the Reel and Frame identified in Exhibit A. The assignee, Finisar Corporation, hereby revokes all previous powers of attorney in the above-identified patent or patent application, which is included in the schedule of U.S. Patents and Patent Applications of Exhibit B, and now hereby appoints all attorneys under:

**CUSTOMER NUMBER: 022913**

of WORKMAN NYDEGGER as attorney with full power of substitution and revocation, to prosecution said application, to make alterations and amendments therein, to receive the Letters Patent, and to transact all business in the Patent and Trademark Office connected therewith.

All correspondence and telephonic communication should be directed to:

**ERIC L. MASCHOFF**

at the address associated with the above-identified customer number.

This Revocation and Substitute Power of Attorney and Statement under 37 C.F.R. 3.73(b) is effective for all of the U.S. Patents and Patent Applications of Exhibit B, and shall be filed at the U.S. Patent & Trademark Office in all of said U.S. Patents and Patent Applications.

Signed this 16 day of March, 2004.

By:



Frank H. Levinson  
Finisar Corporation  
1308 Moffett Park Drive  
Sunnyvale, California 94089

EXHIBIT A

A chain of title of U.S. Patent Application No. 10/028703 filed  
12/28/2001 is shown in an assignment from the inventor(s) to Honeywell International, Inc.  
recorded at the U.S. Patent and Trademark Office at Reel 012724, Frame 0326 and an  
assignment from Honeywell International, Inc.  
to Finisar Corporation recorded at Reel 014468,  
Frame 0407.

# **Exhibit B** **Patents and Patent Applications Subject to Revocation and Substitute Power of Attorney**

| W/N File #    | Title   | Application # | Application Filing Date | Patent # | Grant Date |
|---------------|---|---------------|-------------------------|----------|------------|
| 15436.432.4   | Flexible Optic Connector Assembly   | 08/775330     | 31-Dec-96               |          |            |
| 15436.432.4.4 | Flexible Optic Connector Assembly   | 10/136817     | 30-Apr-02               |          |            |
| 15436.432.6.1 | Fiber Optic Header With Integrated Power Monitor  | 09/481627     | 12-Jan-00               |          |            |
| 15436.432.7.1 | Multiple Pack Active Device Receptacle  | 08/795029     | 14-Feb-97               |          |            |
| 15436.432.7.2 | Fiber Optic S-Bend Connector  | 08/814458     | 10-Mar-97               |          |            |
| 15436.433.3.3 | Vcsel Structure Insensitive to Mobile Hydrogen  | 10/350840     | 24-Jan-03               |          |            |
| 15436.433.4.1 | Coupled Cavity Anti-Guided Vertical Cavity Surface Emitting                                   | 10/147136     | 13-May-02               |          |            |
| 15436.433.6.1 | Metamorphic Long Wavelength High Speed Photodiode   | 10/413186     | 14-Apr-03               |          |            |
| 15436.434.1.1 | Integration of Top-Emitting and Top-Illuminates Optoelectron                                  | 10/284863     | 31-Oct-02               |          |            |
| 15436.434.1.2 | Integration of Top-Emitting and Top-Illuminates Optoelectron                                  | 09/547538     | 12-Apr-00               |          |            |
| 15436.434.2.1 | Method and Apparatus For Hermetically Sealing Photonic Device                                 | 10/444796     | 22-May-03               |          |            |
| 15436.434.3.1 | Mechanical Stabilization of Lattice Mismatched Quantum Wells                                  | 10/634558     | 4-Aug-03                |          |            |
| 15436.434.5   | Hermetic Chip-Scale Package For Photonic Devices  | 09/342801     | 29-Jun-99               |          |            |
| 15436.434.6   | System and Method for Vcsel Polarization Control  | 09/577034     | 23-May-00               |          |            |
| 15436.434.7   | Protective Side Wall Passive for Vcsel Chips  | 09/652555     | 31-Aug-00               |          |            |
| 15436.434.7.1 | Protective Side Wall Passive for Vcsel Chips  | 10/427337     | 1-May-03                |          |            |
| 15436.435.1   | Versatile Method and System for Single Mode Vcsels  | 09/724820     | 28-Nov-00               |          |            |
| 15436.435.1.1 | Versatile Method and System for Single Mode Vcsels  | 10/617290     | 10-Jul-03               |          |            |
| 15436.435.1.2 | Versatile Method and System for Single Mode Vcsels  | 10/617892     | 11-Jul-03               |          |            |
| 15436.435.2   | Resonant Reflector For Use With Optoelectric Devices  | 09/751422     | 29-Dec-00               |          |            |
| 15436.435.3   | Spatially Modulated Reflector For an Optoelectric Device                                      | 09/751423     | 29-Dec-00               |          |            |
| 15436.435.4   | Apparatus and Method Providing a Balancing Load to a Laser Differential Drive Circuit         | 09/803821     | 12-Mar-01               |          |            |
| 15436.435.5   | Method and Apparatus For Producing Vcsels with Dielectric Mirrors and Self-Aligned Gain Guide | 09/881167     | 14-Jun-01               |          |            |
| 15436.435.6   | Methods and Systems for Wafer Level Burn-In of Electronic De                                  | 60/311916     | 13-Aug-01               |          |            |

**Exhibit B**

**Patents and Patent Applications Subject to Revocation and Substitute Power of Attorney**

|               |  |           |           |  |  |
|---------------|--|-----------|-----------|--|--|
| 15436.435.7   | Laser Light Sources Having Integrated Detector and Intensity Control and Methods of Producing Same         | 09/970073 | 20-Oct-01 |  |  |
| 15436.436.1   | Method and System for Releasing a Pluggable Module   | 10/006103 | 6-Dec-01  |  |  |
| 15436.436.2   | Vertical Cavity Surface Emitting Laser Including Indium Antimony and Nitrogen in the Active Region         | 10/026016 | 20-Dec-01 |  |  |
| 15436.436.3   | Vertical Cavity Surface Emitting Laser Including Indium Antimony and Nitrogen in the Active Region         | 10/026019 | 20-Dec-01 |  |  |
| 15436.436.4   | Vertical Cavity Surface Emitting Laser Including Indium Antimony and Nitrogen in the Active Region         | 10/026055 | 20-Dec-01 |  |  |
| 15436.436.5   | Vertical Cavity Surface Emitting Laser Including Indium Antimony and Nitrogen in the Active Region         | 10/026020 | 27-Dec-01 |  |  |
| 15436.436.6   | Indium Free Vertical Cavity Surface Emitting Laser   | 10/026044 | 27-Dec-01 |  |  |
| 15436.436.7   | Submount For Vertical Cavity Surface Emitting Laser and Detectors  | 10/028288 | 28-Dec-01 |  |  |
| 15436.436.8   | Current Confinement, Capacitance Reduction and Isolation of VCSELs Using Deep Elemental Traps              | 10/028303 | 28-Dec-01 |  |  |
| 15436.437.1   | Asymmetric Distribute Bragg Reflector for Vertical Cavity Surface Emitting Lasers                          | 10/028435 | 28-Dec-02 |  |  |
| 15436.437.2   | Gain Guide Implant in Oxide Vertical Cavity Surface Emitting Laser   | 10/028436 | 28-Dec-02 |  |  |
| 15436.437.3   | Vertical Cavity Surface Emitting Laser Having a Gain Guide Aperture Interior to an Oxide Confinement Layer | 10/028437 | 28-Dec-01 |  |  |
| 15436.437.4   | Wavelength Division Multiplexed Vertical Cavity Surface Emitting Laser                                     | 10/028438 | 28-Dec-01 |  |  |
| 15436.437.5   | Integral Vertical Cavity Surface Emitting Laser and Power Monitor  | 10/028439 | 28-Dec-01 |  |  |
| 15436.437.6   | Tunable Laser Assembly   | 10/037010 | 31-Dec-01 |  |  |
| 15436.437.7   | Optoelectric Devices and Methods of Production   | 10/037013 | 31-Dec-01 |  |  |
| 15436.437.7.1 | Optoelectric Devices and Methods of Production   | 10/669220 | 24-Sep-03 |  |  |
| 15436.437.8   | Long-Wavelength VCSEL Bottom Mirror  | 10/078422 | 21-Feb-02 |  |  |
| 15436.438.1   | Carbon Doped GaSSb Suitable for Use in Tunnel Junctions of Long-Wavelength VCSELs                          | 10/078473 | 21-Feb-02 |  |  |
| 15436.438.2   | GaAs/Al (Ga)AS Distributed Bragg Reflector on InP  | 10/078474 | 21-Feb-02 |  |  |
| 15436.438.3   | Resonant Reflector for Increased Wavelength and Polarization Control                                       | 10/121490 | 12-Apr-02 |  |  |
| 15436.438.4   | Methods and Systems for Removing an Oxide-Induced Dead Zone in a Semiconductor Device Structure            | 10/156324 | 24-May-02 |  |  |
| 15436.438.5   | Wavelength Selective Detector  | 10/162928 | 4-Jun-02  |  |  |



**Exhibit B**  
**Patents and Patent Applications Subject to Revocation and Substitute Power of Attorney**

|              |   |           |           |  |
|--------------|---|-----------|-----------|--|
| 15436.438.6  | Optical Transceiver   | 10/163057 | 4-Jun-02  |  |
| 15436.438.7  | Method and Apparatus For Monitoring the Power of a Multi-Wavelength Optical Signal  | 10/163440 | 4-Jun-02  |  |
| 15436.438.8  | Atomic Hydrogen as a Surfactant in Production of Highly Strained InGaAs, InGaAsN, InGaAsNSb, and/or GaAsNSb Quantum Wells | 10/219425 | 14-Aug-02 |  |
| 15436.438.9  | Single Mode VCSEL   | 10/232382 | 3-Sep-02  |  |
| 15436.439.1  | Hybrid Mirror VCSELS  | 10/233112 | 3-Sep-02  |  |
| 15436.439.2  | Nitrogen Sources for Molecular Beam Epitaxy   | 10/233625 | 4-Sep-02  |  |
| 15436.439.3  | Oxide Confined VCSEL With a Thin Oxide and Enhanced Conduction  | 10/283381 | 28-Oct-02 |  |
| 15436.439.4  | Long-Wavelength Vertical Cavity Surface Emitting Lasers   | 10/283298 | 30-Oct-02 |  |
| 15436.439.5  | Selectively-Etchable Heterogeneous Composite Distributed Bragg  | 10/283311 | 30-Oct-02 |  |
| 15436.439.6  | Method and Apparatus for Monitoring the Power Level of Two  | 10/283835 | 30-Oct-02 |  |
| 15436.439.7  | High Speed Optical Transceiver Package Using Heterogeneous  | 10/292578 | 11-Nov-02 |  |
| 15436.439.8  | Long Wavelength VCSEL With Tunnel Junction and Implant  | 10/301380 | 21-Nov-02 |  |
| 15436.439.9  | Bidirectional Optical Device  | 10/308308 | 3-Dec-02  |  |
| 15436.440.1  | Optical Transceiver (CIP of 15436.438.6.1)  | 10/316355 | 11-Dec-02 |  |
| 15436.440.10 | Pluggable Optical Optic System Having a Lens Fiber Stop   | 10/456123 | 6-Jun-03  |  |
| 15436.440.11 | INP Base Long Wavelength VCSEL  | 10/606104 | 25-Jun-03 |  |
| 15436.440.12 | A Dielectric VCSEL Gain Guide   | 10/607629 | 27-Jun-03 |  |
| 15436.440.13 | VCSEL Having Thermal Management   | 10/607758 | 27-Jun-03 |  |
| 15436.440.14 | Enhanced Lateral Oxidation  | 10/607887 | 27-Jun-03 |  |
| 15436.440.2  | Angled Wafer Rotating Ion Implantation  | 10/323889 | 20-Dec-02 |  |
| 15436.440.3  | Material System for Bragg Reflector in Long Wavelength VCSEL  | 10/323923 | 20-Dec-02 |  |
| 15436.440.4  | Zero-Clearance Receptacle Design For Single Mode Optical Fib  | 10/347789 | 22-Jan-03 |  |
| 15436.440.5  | Wafer Integration of Micro-Optics   | 10/351710 | 27-Jan-03 |  |
| 15436.440.6  | System and Methods Using Migration Enhanced Epitaxy For Flat  | 10/352293 | 27-Jan-04 |  |
| 15436.440.7  | Connectorized Optical Component Misaligned Detection System   | 10/430941 | 7-May-03  |  |
| 15436.440.8  | VCSEL Mode-Transforming Phase Filter With Enhanced Performance  | 10/436069 | 13-May-03 |  |

# Exhibit B

## Patents and Patent Applications Subject to Revocation and Substitute Power of Attorney

|              |   |           |           |         |           |
|--------------|---|-----------|-----------|---------|-----------|
| 15436.440.9  | Integrated Sleeve Pluggable Package   | 10/453307 | 3-Jun-03  |         |           |
| 15436.441.1  | Compact Package Design for Vertical Cavity Surface Emitting Laser   | 10/607982 | 30-Jun-03 |         |           |
| 15436.441.10 | Tunnel Junction Utilizing GAPSB, ALGAPSB  | 10/697028 | 31-Oct-03 |         |           |
| 15436.441.11 | Modulation Doped Tunnel Junction  | 10/706906 | 14-Nov-03 |         |           |
| 15436.441.2  | High Speed Optical System   | 10/610256 | 30-Jun-03 |         |           |
| 15436.441.3  | A Lens Optical Coupler  | 10/612660 | 2-Jul-03  |         |           |
| 15436.441.4  | Pseudomorphic Layer in Tunnel Junction VCSEL  | 10/611992 | 30-Jul-03 |         |           |
| 15436.441.5  | An Optical Coupling System  | 10/620489 | 16-Jul-03 |         |           |
| 15436.441.6  | Coupler Having Reduction of Reflections to Light Source   | 10/620512 | 16-Jul-03 |         |           |
| 15436.441.7  | Optical Coupling System   | 10/622042 | 17-Jan-03 |         |           |
| 15436.441.8  | Edge Bead Control Method and Apparatus  | 10/623351 | 18-Jul-03 |         |           |
| 15436.441.9  | Long Wavelength VCSEL Device Processing   | 10/697660 | 29-Oct-03 |         |           |
| 15436.431.1  | Optical Connector Configured to Facilitate Active Alignment of a Photoelectric Device With an Optic Fiber                                       | 07/916785 | 17-Jul-92 | 5231686 | 27-Jul-93 |
| 15436.431.2  | Emitting With Structures Located at Positions Which Prevent Certain Disadvantageous Modes and Enhance Generation of Light in Advantageous Modes | 07/909270 | 6-Jul-92  | 5264715 | 23-Nov-93 |
| 15436.431.3  | Inhibited Laser Power Monitor   | 08/175016 | 29-Dec-93 | 5475701 |           |
| 15436.431.4  | Multi-Gigahertz Frequency-Modulated Vertical-Cavity Surface Emitting Laser  | 08/476965 | 7-Jun-95  | 5574738 | 12-Nov-96 |
| 15436.431.5  | Light Source Monitor With Compensated Tracking Ratio  | 08/739471 | 28-Oct-96 | 5737348 | 7-Apr-98  |
| 15436.431.6  | Self Limiting Intrinsically Eye-Safe Laser Utilizing an Increasing Absorption Layer   | 08/683277 | 18-Jul-96 | 5745515 | 28-Apr-98 |
| 15436.431.7  | Current Confinement For a Vertical Cavity Surface Emitting L  | 08/671995 | 28-Jun-96 | 5767674 | 9-Jun-98  |
| 15436.431.8  | Filamented Multi-Wavelength Vertical Cavity Surface Emitting Laser  | 08/734403 | 16-Oct-96 | 5774487 | 30-Jun-98 |
| 15436.431.9  | Semiconductor Device With a Laser and a Photodetector in a Common Container   | 08/687701 | 26-Jul-96 | 5799030 | 25-Aug-98 |
| 15436.431.10 | Apparatus For Determining the Effect of Modal Noise on a Communicating System by Flexing an Optical Fiber                                       | 08/743367 | 4-Nov-96  | 5805318 | 8-Sep-98  |
| 15436.431.11 | Lens For a Semi-Conductor Device With a Laser and Photodetector   | 08/686895 | 26-Jul-96 | 5812518 | 22-Sep-98 |

# **Exhibit B** **Patents and Patent Applications Subject to Revocation and Substitute Power of Attorney**

|               |   |           |           |         |           |
|---------------|---|-----------|-----------|---------|-----------|
| 15436.431.12  | Apparatus For Determining the Effect of Modal Noise on a Communication System by Affecting an Optical Fiber Discontinuity | 08/743369 | 4-Nov-96  | 5841915 | 24-Nov-98 |
| 15436.431.13  | Fabrication of Vertical Cavity Surface Emitting Laser With Current Confinement  | 08/843116 | 28-Apr-97 | 5893722 | 13-Apr-99 |
| 15436.431.14  | Laser With Selectively Changed Current Confining Layer  | 08/812620 | 6-Mar-97  | 5903588 | 11-May-99 |
| 15436.431.15  | Laser With an Improved Mode Control   | 08/674230 | 28-Jun-96 | 5940422 | 17-Aug-99 |
| 15436.431.16  | Monolithic Vertical Cavity Surface Emitting Laser And Resonant Cavity Photodetector Transceiver                           | 08/736803 | 25-Oct-96 | 5978401 | 2-Nov-99  |
| 15436.432.1   | Resonant Reflector For Improved Optoelectronic Device Performance and Enhanced Applicability                              | 08/872534 | 11-Jun-97 | 6055262 | 25-Apr-00 |
| 15436.432.2   | Bandgap Isolated Light Emitter  | 08/989734 | 12-Dec-97 | 6064683 | 16-May-00 |
| 15436.432.3   | Vertical Cavity Surface Emitting Laser Having Intensity Control   | 09/001894 | 31-Dec-97 | 6069905 | 30-May-00 |
| 15436.432.4.1 | Flexible Optic Connector Assembly   | 09/134229 | 14-Aug-98 | 6069991 | 30-May-00 |
| 15436.432.4.2 | Flexible Optic Connector Assembly   | 09/135412 | 14-Aug-98 | 6088498 | 11-Jul-00 |
| 15436.432.4.3 | Flexible Optic Connector Assembly   | 09/268191 | 15-Mar-99 | 6404960 | 11-Jun-02 |
| 15436.432.5   | Method For Controlling the Operation of a Laser   | 08/813751 | 7-Mar-97  | 6078601 | 20-Jun-00 |
| 15436.432.6   | Fiber Optic Header With Integrated Power Monitor  | 09/119089 | 20-Jul-98 | 6081638 | 27-Jun-00 |
| 15436.432.7   | Active Device Receptacle  | 08/664039 | 13-Jun-96 | 6086263 | 11-Jul-00 |
| 15436.432.8   | Chip-To-Interface Alignment   | 09/052643 | 31-Mar-98 | 6095697 | 1-Aug-00  |
| 15436.433.1   | Flexible Hermetic Sealing   | 08/995690 | 22-Dec-97 | 6194789 | 27-Feb-01 |
| 15436.433.2   | Fiber Optic Header For an Edge Emitting Laser   | 09/119273 | 20-Jul-98 | 6205274 | 20-Mar-01 |
| 15436.433.3   | Vcsel Structure Insensitive to Mobile Hydrogen  | 08/989731 | 12-Dec-97 | 6256333 | 3-Jul-01  |
| 15436.433.3.1 | Vcsel Structure Insensitive to Mobile Hydrogen  | 09/819029 | 30-Nov-00 | 6459719 | 1-Oct-02  |
| 15436.433.3.2 | Vcsel Structure Insensitive to Mobile Hydrogen  | 09/819024 | 30-Nov-00 | 6522680 | 18-Feb-03 |
| 15436.433.4   | Coupled Cavity Anti-Guided Vertical Cavity Surface-Emitting Laser   | 09/387424 | 31-Aug-99 | 6411638 | 25-Jun-02 |
| 15436.433.5   | Method and System For Versatile Optical Sensor Package  | 09/607048 | 30-Jun-00 | 6465774 | 15-Oct-02 |
| 15436.433.6   | Metamorphic Long Wavelength High Speed Photodiode   | 09/766797 | 22-Jan-01 | 6558973 | 6-May-03  |
| 15436.434.1   | Integration of Top-Emitting and Top-Illuminates Optoelectron Integrated Circuit Device                                    | 09/724249 | 28-Nov-00 | 6586776 | 1-Jul-03  |
| 15436.434.2   | Method and Apparatus For Hermetically Sealing Photonic Devices  | 09/224210 | 30-Dec-98 | 6588949 | 8-Jul-03  |
| 15436.434.3   | Mechanical Stabilization of Lattice Mismatched Quantum Wells  | 09/217223 | 21-Dec-98 | 6603784 | 5-Aug-03  |
| 15436.434.4   | Graded Thickness Optical Element and Method of Manufacture Therefor   | 09/975299 | 10-Oct-01 | 6606199 | 12-Aug-03 |

# PATENT

Docket No.: 15436.436.8.

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Examiner: James W. Davie



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) 2828

### CHANGE OF ATTORNEY DOCKET NUMBER

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

For convenience and ready identification of the papers received in connection with the above-identified patent application, please reference in all future communications my Docket No. 15436.436.8.

All correspondence and telephonic communications should be directed to:

**ERIC L. MASCHOFF**  
**022913**  
**Customer Number**  
Telephone: (801) 533-9800  
Facsimile: (801) 328-1707

DATED this 6 day of April, 2004.

Respectfully submitted,



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Attorney for Applicant  
Registration No. 43,685  
Customer No. 022913

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